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110704 Factovisors

The factorial function, $n!$ is defined as follows for all non-negative integers n:

$$\begin{aligned} 0! &= 1 \\ n! &= n \times (n-1)! \qquad (n > 0) \end{aligned}$$

We say that a divides b if there exists an integer k such that

$$k \times a = b$$

Input

The input to your program consists of several lines, each containing two non-negative integers, n and m, both less than 2^{31}.

Output

For each input line, output a line stating whether or not m divides $n!$, in the format shown below.

Sample Input

```
6 9
6 27
20 10000
20 100000
1000 1009
```

Sample Output

```
9 divides 6!
27 does not divide 6!
10000 divides 20!
100000 does not divide 20!
1009 does not divide 1000!
```

